

## **REMARKS**

Claims 2-11, 13, 14, 76 and 77 are pending in this application. By this Amendment, claim 14 is amended and new claims 76 and 77 are added. Claim 14 was amended to address a rejection under 35 USC 112.

No new matter is added to the present application by this Amendment. Support for the new features added to claim 14 and new claims 76 and 77 find support within the present specification, as originally filed, at, for example, page 4, line 26 – page 5, line 15.

Entry of the amendments and reconsideration of the application are respectfully requested.

### **I. Rejection Under 35 USC 112**

Claim 14 was rejected under 35 USC 112, second paragraph, as allegedly being indefinite. This rejection is respectfully traversed.

Claim 14 has been amended to address the rejection under 35 USC 112, second paragraph, as suggested by the Patent Office.

Applicants submit that amended claim 14 is definite and in accordance with 35 USC 112, second paragraph.

Thus, Applicants respectfully request withdrawal of the rejection under 35 USC 112, second paragraph.

### **II. Rejection Under 35 USC 102**

Claims 2-8, 11, 13 and 14 were rejected under 35 USC 102(b) as allegedly being anticipated by U.S. Patent No. 5,986,046 to Nishiyama et al. (hereinafter “Nishiyama”). This

rejection is respectfully traversed.

The Patent Office alleges that each and every feature of the foregoing claims is disclosed by Nishiyama. Applicants respectfully disagree with the allegations of the Patent Office as set forth in the Office Action.

Amended independent claim 14 is directed to a process requiring (1) providing a metal salt of an organic acid or an inorganic acid having organic radicals, (2) preparing an oxidant by contacting the metal salt with an ion exchanger and (3) mixing the oxidant with at least one conductive polymer precursor for preparing at least one conductive polymer.

Claims 2 and 3 of the present application are directed to embodiments of the ion exchanger required in claim 14. In the Office Action, the Examiner cites to the passage at col. 4, lines 1-22 of Nishiyama and rejects claims 2 and 3 on the basis that Nishiyama's OH group or COOH group is a dopant anion that can dissociate to react with the metal ion and that the alleged dopant anion discloses the anion exchanger of claims 2 and 3. Thus, it is clear that the Patent Office alleges that the Nishiyama's alleged ion exchanger is the OH group or COOH group.

However, Nishiyama does not teach that the OH group or the COOH group is a dopant anion as alleged by the Patent Office. Instead, Nishiyama discloses that the resulting complex salt is taken or entrapped into the electronconductive polymer as the dopant anion. Col. 4, lines 1-22 of Nishiyama specifically set forth:

“...the OH group or the COOH group dissociates to react with a metal ion such as the iron(III) ion so as to form a *complex salt* (cholate complex) as shown in FIG. 5. This *complex salt is taken or entrapped into the electroconductive polymer as the dopant anion, with the result that the heat-resistant property cannot be elevated*. Namely, as seen from FIG. 5, "H" of the OH group or the COOH group is lost because of formation of the cholate of the iron (III) ion with the OH groups or the COOH groups, and therefore, the metal ion such as the iron (III) ion functioning as the catalyst in oxidation is taken or entrapped

into the electroconductive polymer.

*The most important point in the present invention is that the derivative of aromatic sulfonic acid having the OH group or the COOH group as the substituting group is dissolved in the non-protonic organic solvent, so that the dissociation of the OH group or the COOH group is suppressed or minimized, and therefore, the formation of the complex salt (chelate compound) with the metal ion is suppressed or minimized, with the result that derivative of aromatic sulfonic acid is effectively introduced into the electroconductive polymer as the dopant anion for elevating the heat resistant property.”*  
(emphasis added)

This cited passages of Nishiyama does not disclose that the prior art includes a first step of providing a metal salt and then a second step of preparing an oxidant by contacting a metal salt with ion exchanger as required by the present claims. In contrast, Nishiyama teaches that the prior art including forming a complex salt (formed by the OH group or the COOH group dissociating to react with the metal ion such as the iron (III) ion so as to form a complex salt) which is taken or entrapped into the electroconductive polymer as a dopant anion. Moreover, the cited passages of Nishiyama disclose that the most important point of Nishiyama's invention is suppressing (1) the dissociation of the OH or COOH group (Nishiyama's alleged anion exchanger) and (2) formation of complex salt with the metal ion. Thus, Nishiyama's invention teaches away from inclusion of the alleged anion exchanger and formation of the complex salt and also teaches away of the presently claimed process which requires contacting a metal salt with the ion exchanger to produce an oxidant.

Accordingly, Nishiyama fails to disclose preparing an oxidant by contacting the metal salt with an ion exchanger as required by amended claim 14.

Because the features of independent claim 14 are not disclosed by Nishiyama, Nishiyama does not anticipate, or rendered obvious, the features specifically defined in claim 14 and its dependent claims.

Claim 7 requires that the transition metal salt is Fe(III) p-toluenesulphonate, Fe(III) o-toluenesulphonate or a mixture of Fe(III) p-toluenesulphonate and Fe(III) o-toluenesulphonate. Applicants want to take this opportunity to point out that even if a derivative of an aromatic sulfonic acid being substituted with a OH-group or a COOH-group is regarded as an alleged ion exchanger used to allegedly treat an iron (III) ion, Nishiyama certainly does not teach or suggest that a skilled artisan would have treated a metal salt selected from the group consisting of Fe(III) p-toluenesulphonate, Fe(III) o-toluenesulphonate and a mixture thereof with such a derivative as required by claim 7. The derivative of an aromatic sulfonic acid being substituted with a OH-group or a COOH-group allegedly disclosed by Nishiyama is an organic component used to prepare the oxidant. Nishiyama's inorganic component is the iron(III) ion. Thus, a skilled artisan would not have been motivated to treat a metal salt selected from the group consisting of Fe(III) p-toluenesulphonate, Fe(III) o-toluenesulphonate or a mixture thereof (i.e., a metal salt already comprising an organic component) with another organic component in order to prepare an oxidant. Applicants also point out that p-toluensulphonate and o-toluensulfonate are not aromatic sulfonic acids carrying OH- or COOH- groups as a substituent.

For at least these reasons, claims 2-8, 11, 13 and 14 are patentably distinct from and/or non-obvious in view of Nishiyama. Reconsideration and withdrawal of the rejection of the claims under 35 USC 102(b) are respectfully requested.

### **III. Rejection Under 35 USC 103**

Claims 9 and 10 were rejected under 35 USC 103(a) as allegedly being unpatentable over Nishiyama in view of U.S. Patent No. 4,910,645 to Jonas et al. (hereinafter "Jonas").

This rejection is respectfully traversed.

The Patent Office alleges that each and every feature of the foregoing claims would have been obvious to a skilled artisan in view of the teachings of Nishiyama and Jonas. Applicants respectfully disagree with the allegations of the Patent Office as set forth in the Office Action.

Jonas does not remedy the deficiencies of Nishiyama with respect to claim 14, from which claims 9 and 10 depend, because Jonas also fails to teach or suggest preparing an oxidant by contacting the metal salt with an ion exchanger. Thus, Nishiyama and Jonas, taken singly or in combination, do not teach or suggest preparing an oxidant by contacting the metal salt with an ion exchanger as required by amended claim 14.

Because the features of independent claim 14 are not disclosed by Nishiyama and Jonas, taken singly or in combination, these references would not have anticipate, or rendered obvious, the features specifically defined in claim 14 and its dependent claims.

For at least these reasons, claims 9 and 10 are patentably distinct from and/or non-obvious in view of Nishiyama and Jonas. Reconsideration and withdrawal of the rejections of the claims under 35 USC 103(a) are respectfully requested.

#### **IV. New Claims**

Applicants take this opportunity to submit that none of the cited references, taken singly or in combination, teach or suggest treating an oxidant with an ion exchanger, or treating an ion exchanger with an oxidant wherein, after the treatment, the two components are separated from each other. In contrast, even if Nishiyama's alleged derivative of aromatic sulfonic acid having, as a substituting group, a OH-group or a COOH-group, is allegedly seen

as an ion exchanger, Nishiyama does not teach that after this derivative has been brought into contact with the iron(III) ion, both components are separated of from each other before the oxidant is used to catalyze the oxidative polymerization of conductive polymer precursors. Instead Nishiyama's components remain together in an oxidant solution which is used to prepare electrically conductive polymers (see the examples according to *Embodiment 1-3* of Nishiyama).

Thus, none of the cited references, taken singly or in combination, teach or suggest separating the ion exchanger from the oxidant before mixing the oxidant with the at least one conductive polymer as recited in newly added claim 76. Moreover, none of the cited references, taken singly or in combination, teach or suggest that the separation of the oxidant from the ion exchanger is accomplished by passing a solution of the metal salt through a column containing the ion exchanger, or bringing the metal salt, solvent and ion exchanger together in a vessel followed by separating of the ion exchanger from the oxidant as required by newly added claim 77.

Accordingly, the subject matter of new claims 76 and 77 are patentable and nonobvious in view of the cited references.

## **V. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 2-11, 13, 14, 76 and 77 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the

undersigned at the telephone number set forth below.

Early and favorable action is earnestly solicited.

**CONDITIONAL PETITION FOR EXTENSION OF TIME**

If entry and consideration of the amendments above requires an extension of time, Applicant respectfully requests that this be considered a petition therefor. The Commissioner is authorized to charge any fee(s) due in this connection to Deposit Account No. 14-1263.

**ADDITIONAL FEE**

Please charge any insufficiency of fees, or credit any excess, to Deposit Account No. 14-1263.

Respectfully submitted,  
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